

## Study Guide

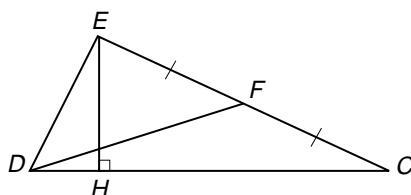
Student Edition  
Pages 238–244**Special Segments in Triangles**

Four special types of segments are associated with triangles.

- A **median** is a segment that connects a vertex of a triangle to the midpoint of the opposite side.
- An **altitude** is a segment that has one endpoint at a vertex of a triangle and the other endpoint on the line containing the opposite side so that the altitude is perpendicular to that line.
- An **angle bisector** of a triangle is a segment that bisects an angle of the triangle and has one endpoint at the vertex of that angle and the other endpoint on the side opposite that vertex.
- A **perpendicular bisector** is a segment or line that passes through the midpoint of a side and is perpendicular to that side.

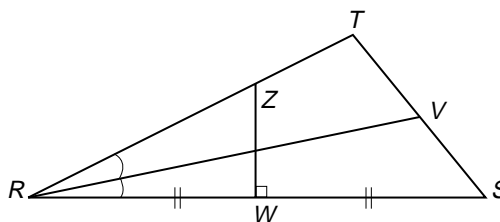
**Examples:**

1



$\overline{DF}$  is a median of  $\triangle DEC$ .  
 $\overline{EH}$  is an altitude of  $\triangle DEC$ .

2



$\overline{RV}$  is an angle bisector of  $\triangle RST$ .  
 $\overline{WZ}$  is a perpendicular bisector of side  $\overline{RS}$ .

**Draw and label a figure to illustrate each situation.**

- $\overline{OQ}$  is a median and an altitude of  $\triangle POM$ .
- $\overline{KT}$  is an altitude of  $\triangle KLM$ , and  $L$  is between  $T$  and  $M$ .
- $\overline{HS}$  is an angle bisector of  $\triangle GHI$ , and  $S$  is between  $G$  and  $I$ .
- $\triangle NRW$  is a right triangle with right angle at  $N$ .  $\overline{NX}$  is a median of  $\triangle NRW$ .  $\overline{YX}$  is a perpendicular bisector of  $\overline{WR}$ .
- $\triangle TRE$  has vertices  $T(3, 6)$ ,  $R(-3, 10)$ , and  $E(-9, 4)$ . Find the coordinates of point  $M$  if  $\overline{TM}$  is a median of  $\triangle TRE$ .